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# THE UNITED STATES OF AMERICA

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*September 08, 2004*

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Certified by



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## PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

INVENTOR(S)					
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)			
JOHN DAN	MABRY	INDIANAPOLIS, INDIANA			
<input type="checkbox"/> Additional inventors are being named on the _____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (280 characters max)					
UNIVERSAL REMOTE					
CORRESPONDENCE ADDRESS					
<div style="display: flex; justify-content: space-between;"> <div> <p>Direct all correspondence to:</p> <p><input type="checkbox"/> Customer Number <span style="border: 1px solid black; display: inline-block; width: 150px; height: 20px; vertical-align: middle;"></span> →</p> <p>OR <span style="margin-left: 20px;">Type Customer Number here</span></p> </div> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 250px;"> <p>Place Customer Number Bar Code Label here</p> </div> </div>					
<input checked="" type="checkbox"/> Firm or Individual Name	JOSEPH S. TRIPOLI, THOMSON LICENSING INC.				
Address	PATENT OPERATIONS				
Address	P. O. BOX 5312				
City	PRINCETON	State	NJ	ZIP	08543-5312
Country	USA	Telephone	609-734-6800	Fax	609-734-6888
ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification Number of Pages <span style="border: 1px solid black; display: inline-block; width: 40px; text-align: center;">3</span>		<input type="checkbox"/> CD(s), Number <span style="border: 1px solid black; display: inline-block; width: 40px;"></span>			
<input checked="" type="checkbox"/> Drawing(s) Number of Sheets <span style="border: 1px solid black; display: inline-block; width: 40px; text-align: center;">4</span>		<input type="checkbox"/> Other (specify) <span style="border: 1px solid black; display: inline-block; width: 40px;"></span>			
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76					
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)					
<div style="display: flex; justify-content: space-between;"> <div> <p><input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.</p> <p><input type="checkbox"/> A check or money order is enclosed to cover the filing fees</p> <p><input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: <span style="border: 1px solid black; display: inline-block; width: 100px; text-align: center;">07-0832</span></p> <p><input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.</p> </div> <div style="text-align: right;"> <p>FILING FEE AMOUNT (\$)</p> <div style="border: 1px solid black; display: inline-block; padding: 5px; text-align: center;">\$160</div> </div> </div>					
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<p><input checked="" type="checkbox"/> No.</p> <p><input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are: _____</p>					

Respectfully submitted,  
SIGNATURE *Carlos M. Herrera*  
TYPED or PRINTED NAME CARLOS M. HERRERA  
TELEPHONE 717-295-6561

Date 8/25/03

REGISTRATION NO. 44,762  
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**UNIVERSAL REMOTE**

The problem solved by the remote control, to be described, is that of ease of use. More specifically it deals with the issue of operating said remote in an environment where sight  
5 regarding the remote is limited. Such as a darkened room when watching TV. This specific keypad is designed to work with the overall form of the device to allow the user to learn to use this remote quickly and easily. The end result being that the user may operate multiple devices with this remote without having to look at the remote for guidance i.e. by feel alone.

All remotes in one way or another attempt to guide the user to easier operation of the  
10 devices they control. Such is the point of the remote control in the first place. They all place the buttons in a manner that their inventors feel is the optimal location for end users operation. Additionally they will sometimes use the shape of the buttons to tactile guide the user through the functions of the remote. What sets this invention apart from previous attempts is the specific layout of the buttons to their functional groupings and the specific shapes of the  
15 buttons themselves.

The functional purpose of the overall form of the remote is to strategically place the hand in the correct position on the remote so that the thumb will be in the best position to effectively and easily reach the most used keys of the remote. The keys themselves are separated out into groupings based on their functionality or "zones" and that functionality is  
20 as described below:

- a. Power button: This zone contains only one button who's sole function is to turn on or off whichever device may currently be selected. This is the single most important key on the remote function wise. This is the reason it is the highest key on the remote and is zoned only to itself. The key gets its triangular shape by essentially mimicking an  
25 angled cut through the top of the remote. The meaning behind this shape is that it appears a physical part of the core case top form. A fitting definition for a button who's functionality is the core of the remote. On this design this button is right of the centerline representing the right hand corner of the remote. This was done to serve the majority of its users that will be right handed, however in future models it could easily appear at the left to serve left handed users as well. It should be noted that this is the  
30 largest single key on the remote. This serves two purposes. First it is, visually, the most prominent key on the remote, and as stated before this follows its function as the most important key on the remote. Second it is, tactile, the most prominent key on the remote. It should also be noted that the power key is the shortest button on the remote. This was done to promote its unity in the general form of the remote both visually and tactile for the reasons stated above. This also decreases the chance of accidentally actuating this key. Along the slanted side of the case top rolls down into the remote case. This was done to give the thumb a comfortable place to rest when this key is depressed. All of these features produce a key that is unmistakable to the touch and  
40 easily discerned from the others by sight.

- b. Device key pyramid: The device keys are those which are used to select individual components or devices to let the remote talk to those devices individually when selected. These keys are the second most important functional grouping. And as such the is the second zone of the remote from top to bottom. The boxy or rectangular shape of these buttons provides a clear tactile outline for the user. For instance when there is an instance of multiple buttons in a row the user can, by this shape, easily tell where one button ends and the next button begins. At the same time this shape provides a sense of continuity. As in a matrix or grid, the linear sides allow the user to sweep along a series of buttons by feel and define them as a row. Once a row is defined the user can use this reference point to sweep up or down to locate additional functions while still retaining a sense of where they, the user, are on the remote. The flat tops of these buttons parallel to the case top also assist in this functionality. These rectangular buttons are accentuated by 45 degree beveled edges. These edges exist at the top right and lower left of all six buttons in this zone. This beveled edge provides for a softer less "exact" feeling as the user moves their thumb from right to left. However the sharper corner in the upper left of the button provides for a positive feedback as the user moves their thumb from left to right. The purpose of this feature is to make the keys more distinguishable from left to right rather than from right to left. This feature is designed to counteract the natural tendency of the right-handed user to sweep the keys from right to left, and as the buttons are ordered in importance from left to right. This beveling procedure is used in other zones as well. As a special note though, these buttons carry the extra bevel located at the bottom left to differentiate them tactile from the similarly shaped buttons located below them. Perhaps the biggest feature of this zone though is their pyramid stacking scheme. This scheme was implemented primarily to give the devices they represent a hierarchy. This hierarchy is derived from the devices that are most interacted with to those whom are least interacted with. The way this is implemented is that the most used device is put at the top, which incidentally is the ordering convention of the zoning of this remote, of this pyramid and is the only button in its row. The next two most used devices are placed in row beneath the first row. And lastly the three next most used devices are placed in a row of their own below the first two. The reading order standard of western civilization, left to right, top to bottom, is widely used in this remote to denote hierarchy of functions and the device key pyramid zone is no exception. The devices are not only ordered most important from top to bottom but from left to right as well. This allows the user to more intuitively locate a remember where specific device keys are. The proportion of these buttons is also an important feature which will be discussed later on.
- c. 0-1-4-6-8 Function key zone: This zone located below the device key zone is implemented as support functions for the devices. Due to the wide variety of device applications of this remote that may be called into service, it was deemed important to have it support a variable function key structure to support these applications. This zone was thus defined as zero function keys, 1 function key, 4 function keys, 6 function keys, and 8 function keys. By the strategic use of tooling procedures (pins forming the button holes that can be removed or added) and graphics, this zone accommodates these needs while still retaining symmetry and even visual weight. These keys also employ the use of a beveled upper right corner for the reasons mentioned above.

- d. Navigation zone: The description of the heart of this grouping can be defined as circular in nature and is composed of separate up, down, left, and right keys surrounding a core OK/SELECT key. This core disk key is surrounded by seven satellite keys shaped as squares and oriented in a radial fashion using the OK/SELECT key as a point of origin. This orientation gives each of these satellite keys a different feel while still maintaining a uniform shape.
- e. Volume/Channel zone: This zone is located functionally above the number key zone to facilitate the relationship of these two zones. The rocker styled volume and channel controls being logically placed in an orientation of up equals "+" (plus) and down equals "-" (negative) posed a problem that is solved by their particular shapes. The problem presented by these rocker buttons is that of confusion between these functions from a tactile stand point due to their identical actuation. This is compounded by the fact that these buttons must accept printing on the top and bottom sections for backlight readability. This limitation rules out the use of the use of topographical artifacts that are normally used in this kind of button orientation. The solution to this issue is the implementation of a mirrored "C" shape on these functions. These shapes allow the user to feel the most dramatic edges (upper left - bottom left for the left oriented Volume control and upper right bottom right for the right oriented Channel control). Additionally the "MUTE" and the "GO BACK" keys are located at the apex point of their related Channel or Volume "C" shape creating a tactile triangle of related functionality.
- f. Number Pad zone: This is a number key layout using the afore mentioned beveled edge convention to facilitate their use. It is located conveniently below the Volume/Channel zone. The two additional keys that are included in this group and located on either side of the "0" key at the bottom are missing the beveled corner and are a different scale than the rest of this group. This is to facilitated their differentiation.
- g. Transport zone: This is the traditional key layout for actuating "REVERSE", "PLAY", "FORWARD", "RECORD", "STOP", and "PAUSE" functions associated with devices that use these functions. The notable portion of this group is the protective record bar located directly above the "RECORD" key and the beveled edges of the "RECORD" key and the "FORWARD" key. The protective record bar aids in preventing accidental recording making this button hard to actuate unless it is purposely done so. The Beveled edges previously mentioned are applied to aid the user in navigating this zone tactile.

Additional points of interest having to do with the button layouts as a whole includes that each zone has its own button scale, proportion, and where required for emphasis, shape. This being done to combat tactile confusion from one zone to the next. The next additional note is that general spacing within the zones is smaller than spacing between the zones. This will assist the user in detecting, by feel and visually, these separate zones. Thus making the zoning more obvious and separate the remote into smaller more visually digestible pieces.









